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REMARKS

Claims 1-20 are pending. New Claim 9 is supported at page 5, last line. New Claims 10 and 11 are supported at page 5. New Claims 12-17, and the paragraph added to the specification, are supported by the figures. New Claim 18 is supported as is base Claim 1. The upper and lower ends of the temperature range of new Claims 19 and 20 are supported by temperatures from Examples 1 and 2.

Applicant thanks the Examiner for faxing the Advisory Action to the undersigned since the original was lost in the mail.

I. Claims 1 and 3

Claims 1 and 3 stand rejected under 35 USC § 103(a) as being unpatentable over Admitted Prior Art (WO 93/24324 and EP 0067060) in view of Aoki et al. (U.S. Patent No. 4,007,078) and Ichikawa et al. (U.S. Patent No. 4,994,130).

The Advisory Action of December 11, 2001 states the following:

> [T]he admitted prior art suggests that it is known in extrusion coating processes to form a sheet of plastic and to then apply said sheet directly or virtually directly from the extruder onto a metal substrate (Applicant's specification, page 1, lines 9-10). It is also known as submitted by applicant that applying plastic strips to a metal substrate would require a contact roller that laminates the two together (WO 93/24324 and EP 0067060). Adding onto the teachings of the Admitted Prior Art are Aoki et al. [U.S. Patent No. 4,007,078] and Ichikawa et al. [U.S. Patent No. 4,994,130]. Both secondary references are applied to teach that it is known in extrusion coating processes that the formation of extruded plastic strips needs to be separable from further processes (e.g. laminating to a metal substrate as taught by Ichikawa et al.) when the properties of the strip lack the stabilization required in the final product. It is recognized that no reference has been made of record that teaches a contact roller to be moveable between open and closed positions so as to be able to separate the extrusion process of forming a plastic strip to the laminating process of adhering the plastic strip to a metal substrate by initially

feeding to a haul-off roll. However, it is the position of the examiner that such would have been obvious to one of ordinary skill in the art as the skilled artisan would readily appreciate the need to have the contact roller be moveable when sending an extruded plastic strip to a lamination process if motivated to provide for the capability of separating the extrusion process as taught by the secondary art (Aoki et al, and Ichikawa et al).

It is respectfully presented that the feature of process claim 1 and apparatus claim 3 that the contact roll to be moveable, such that the contact roll may be transformed from a first or "opened" position to a second or "closed" position (Claim 1, stages (iii) and (v), respectively) is not obvious in view of ordinary skill. It is the motion of the contact roll which permits the continuous formation of the plastic strip. Prior to stage (v) the contact roll is in the open position, which directs the cooled plastic strip to the winder, indicated at 7. At stage (v), the contact roll is closed, causing the plastic strip to contact the substrate, also the plastic strip is cut and removed from the winder.

A. WO '324

WO '324, presented in English as CA '746, is provided as an example of conventional film-laminating. Although therein, the plastic film is first subjected to chill rolls, as required by the present claims, no moveable contact roll and separate winder are so described. Moreover, the process described therein includes additives, which contribute to undesirable factors, which are recited on page 1 of the present specification.

B. EP '060

EP '060 described on page 1 of the present specification "teaches away" from the presently claimed invention. Specifically, EP '060, page 2, beginning at line 10, describes the process as applying the plastic in a molten state to the substrate "*without forming into an independent film*" (emphasis added), and describes the advantages resulting therefrom. Thus, EP '060 forbids contacting polymer with a cooling roll or other means of cooling prior to coating the metal. In contrast, present Claim 1 recites "(ii) leading the plastic strip around a cooling roll".

~~Moreover, combination of EP '060 with Aoki et al or Ichikawa et al is improper. It would~~ render EP '060 inoperative for its intended purpose to form an independent film according to Aoki et al or Ichikawa et al because EP '060 specifically requires applying the plastic in a molten state to the substrate "*without forming into an independent film*" whereas Aoki et al and Ichikawa et al do the opposite.

C. Aoki et al. and Ichikawa et al. fail to make up for primary reference deficiencies

The Advisory Action asserts Aoki et al. [U.S. Patent No. 4,007,078] and Ichikawa et al. [U.S. Patent No. 4,994,130] teach it is known in extrusion coating processes that the formation of extruded plastic strips needs to be separable from further processes (e.g. laminating to a metal substrate as taught by Ichikawa et al.) when the properties of the strip lack the stabilization required in the final product. It is respectfully submitted this "needs" statement is incorrect. For example, EP '060 requires direct application of molten polymer to its metal substrate. Thus, it is impossible to incorporate the device of either secondary reference into EP '060 without defeating the purpose of this reference.

1. Aoki et al.

Aoki et al. is not directed to coating a substrate with a plastic. Thus, there is no motivation to combine Aoki et al. with the primary references.

It would defeat the purpose of either primary reference to combine either primary reference with Aoki et al. Aoki et al requires extruding a tubular film to make a bag. It would be illogical to employ a bag as a film for one side of a substrate.

In any event, the structure of Aoki et al. which most closely resembles the moveable contact roll as presently claimed is the switching mechanism E. Aoki et al. also discloses a heat-cutting device I (Fig. 5), which permits the shifting of strip B' from a first passage X to a second passage Y of switching mechanism E. However, Element E is a diverting device provided in addition to the assembly line. A hindsight combination of Aoki et al., and what the Office Action asserts as a metal substrate coating device having press rolls would still employ Element E to divert unstable film, upstream of the press rolls, and not pass the unstable film between the press rolls and substrate.

~~In contrast, the rolls of the present invention are themselves the diverting device.~~ The present invention passes the unstable film through its device (with the rolls in an open position) rather than diverting it upstream of its device. Thus, Aoki et al. diverts defective film upstream of processing equipment. In contrast, the present invention passes defective film through processing equipment as forbidden by Aoki et al.

2. Ichikawa et al.

Ichikawa et al. does not provide any reasonably enabling teaching which would guide one of ordinary skill to construct the moveable contact roll as claimed herein. It is respectfully presented that any "gap filling", i.e. handling the coating material by leading away the plastic strip between an opened contact roll and the substrate until the plastic strip production is underway and stabilized; or selecting a moveable contact roll which presses the plastic strip onto the substrate, could result only from hindsight.

Moreover, Applicant respectfully requests the Examiner to explain where Ichikawa et al, discloses it is known in extrusion coating processes that the formation of extruded plastic strips needs to be separable from further processes (e.g. laminating to a metal substrate as taught by Ichikawa et al.) when the properties of the strip lack the stabilization required in the final product.

In fact, Ichikawa et al teaches away from the present invention. Ichikawa, et al teaches a continuous embodiment and an alternate embodiment using a haul off roller. However, as explained at Ichikawa, et al, col. 3, lines 56-63, the haul off roller embodiment winds up film on the haul off roll to be used later. There is no teaching of switching from the haul off roller to the continuous embodiment. Even if there was a teaching of switching, Ichikawa et al, col. 3, lines 48-63 fails to disclose passing defective polymer between the hot press rollers without coating metal.

II. Claims 2, 4-6 and 8

Claims 2, 4-6 and 8 stand rejected under 35 USC § 103(a) as being unpatentable over "Admitted Prior Art" in view of Aoki et al. and Ichikawa et al. in further view of Smith et al. It

~~is respectfully presented that Smith et al. does not provide for the above-described deficiencies of~~ "Admitted Prior Art", Aoki et al. and Ichikawa et al.

Moreover, apparatus Claim 5 and new method Claim 9 recite coating opposed sides of the substrate simultaneously with their own respective plastic strip coatings.

III. Claim 7

Claim 7 stands rejected under 35 USC § 103(a) as being unpatentable over "Admitted Prior Art" in view of Aoki et al. and Ichikawa et al., in further view of Nishida et al. Nishida et al. also fails to provide for the above-described deficiencies of "Admitted Prior Art", Aoki et al. and Ichikawa et al.

IV. Additional Dependent Claims

New Claims 12-17 recite the metal is straight during coating. In contrast, for example, EP '060 and Aoki et al bend their metal film.

V. Conclusion

Entrance of the above-amendments, reconsideration and passage of this application to issue are respectfully requested.

Respectfully submitted,

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ATTACHMENT I - Marked up specification

plastic for example PET or polypropylene or on one side polypropylene and on the other side PET.

As seen in Figs. 1-3 the substrate travels along a single straight line from the heating means 2, between the contact rolls 6, and to the furnace 15 (fig. 2). For example, fig. 2 shows the heating means and contact roll are arranged such that the metallic strip shaped substrate is straight immediately before, during and immediately after coating.

AMENDED SHEET

~~ATTACHMENT II- Marked-up Claims~~

1. (Three Times Amended) A method for strip-coating a metallic strip-shaped substrate with a strip of plastic comprising the successive stages of:

(i) plastic strip production comprising in-situ casting of a plastic strip;

(ii) leading the plastic strip around a cooling roll;

(iii) leading away the plastic strip between an opened contact roll and the substrate until the plastic strip production is underway and [stabilised] stabilized;

(iv) bringing the plastic strip and the substrate up to speed and heating the substrate to a temperature at or above the softening temperature of the part of the plastic strip facing the substrate;

(v) pressing the plastic strip onto the substrate by closing the contact roll and where applicable breaking off the plastic strip and stopping the plastic strip being led away, while the substrate and the cooling roll are connected by the plastic strip; and

(vi) coating the substrate with the plastic strip;

while performing on the plastic strip as the plastic strip travels between the cooling roll and the contact roll at least one of monitoring thickness of the plastic strip, monitoring [colour] color of the plastic strip, monitoring strip tension and trimming width of the plastic strip.

2. (Twice Amended) The method [Method] in accordance with Claim 1, wherein after the plastic strip has been applied an extra heat treatment stage follows [in order] to improve adhesion.

3. (Twice Amended) An apparatus for strip-coating a metallic strip-shaped substrate with a strip of plastic in accordance with claim 1, comprising in combination:

means of conveying the [metal] metallic strip-shaped substrate;

a contact roll for pressing the plastic strip onto the substrate;

means of producing the plastic strip comprising means of casting for casting the plastic;

a cooling roll for the formation of a plastic strip;

~~means of feeding and guiding for bringing the plastic strip to the substrate via the contact~~ roll and for leading away the plastic strip between an open said contact roll and the substrate until the plastic strip production is underway and [stabilised] stabilized;

wherein the contact roll is moveable to a first position apart from the substrate wherein the contact roll is suitably arranged to co-operate with a means of conveying off the plastic strip and to a second position relative to the substrate wherein the contact roll is suitable to press the plastic strip onto the substrate.

4. (Twice Amended) The apparatus [Apparatus] in accordance with Claim 3, wherein the contact roll is rubber at least on a surface with which it comes into contact with the plastic band.

5. (Twice Amended) The apparatus [Apparatus] in accordance with Claim 3, wherein the means of conveying substrate, the contact roll, the means of casting, the cooling roll and the means of feeding and guiding are essentially duplicated, one set on each side of where the substrate is situated during operation for simultaneously two-sided coating the metallic strip shaped substrate.

6. (Twice Amended) The apparatus [Apparatus] in accordance with Claim 4, wherein the means of conveying substrate, the contact roll, the means of casting, the cooling roll and the means of feeding and guiding are essentially duplicated, one set on each side of where the substrate is situated during operation for simultaneously two-sided coating the substrate.

7. (Amended) The method of [claim] Claim 1, wherein the cooling roll is internally water-cooled.

8. (Amended) The method of [claim] Claim 1, further comprising incorporating adhesion-promoting molecules into the plastic strip, wherein the coating speed is high enough that the adhesion-promoting molecules must be capable of migrating to the surface of the plastic strip within about one second after the plastic strip contacts the substrate.